KEYBOARD INSTRUMENTS

Studies in Keyboard Organology 1500–1800

EDITED BY
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The Single-strung Italian Harpsichord

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The more we come to know of Italian harpsichord-making, the more we become aware of the fact that *the* Italian harpsichord does not exist. In recent years, many interesting details have been discovered that do not fit into the conception of a single Italian harpsichord standard, surviving virtually unchanged for three centuries. The aim of this essay, inspired by the restoration of a 1577 Bertarini harpsichord, is to contribute to the knowledge of one special Italian type.

It is probably owing to their simple disposition that very little attention has been paid to single-strung harpsichords, although at least eight instruments of this kind have been preserved. These are enumerated in the following list, and their characteristics are summarized in the table overleaf:[1]

1. Anonymous (name of maker illegible), Italy, 1503. Milan, Museo Civico. (The instrument has been converted to a clavichord by replacing the jacks with tangents.)[2]
2. Hieronymus Bononiensis 1521. London, Victoria and Albert Museum. (The instrument now possesses two 8′ registers, but according to the Museum's catalogue, it originally had only one.)[3]
3. Dominicus Pisaurensis 1533. Leipzig, Musical Instrument Museum of the Karl-Marx-Universität.[4]
4. Ioannes Baptista Bertarinus, Rome, 1577. Florence, Museo Bardini. (There are some doubts as to the authenticity of the inscription on the jack rail; however, the initials 'GB' on the keys appear to be original.)[5]
5. Anonymous, Italy (Florence?), 16th century. Nürnberg, Germanisches Nationalmuseum (Rück Collection).[6]
6. Anonymous, Italy, 16th or 17th century. London, Fenton House (Benton Fletcher Collection.).[7]
7. Giovanni Battista Boni 1619. Brussels, Musical Instrument Museum of the Conservatoire Royal de Musique.[8]
8. Anonymous, Italy, early 17th century. Olveston, Bristol, A. C. N. Mackenzie of Ord.[9]

All these instruments were made in Italy, and no single-strung harpsichord made elsewhere has survived.[10] Although such instruments are generally considered to be a phenomenon of the sixteenth century,[11] the dates of those listed above do not completely

Characteristics of the Instruments Listed

Maker	*Date*	*Length* *mm*	*inches*	*Original compass*	*Scaling*[a] *mm*	*inches*
Anonymous	1503	1760	69.3	C/E–c‴	267	10.5
Hieronymus Bononiensis	1521	1800	70.9	C/E–c‴ or F–f‴	267[b]	10.5[b]
Dominicus Pisaurensis	1533	1830	72.0	C/E–f‴	288	11.3
I.B. Bertarinus	1577	1790	70.5	C/E–c‴	295	11.6
Anonymous	16th c.	1910	75.2	C/E–c‴	275	10.8
Anonymous	16th or 17th c.	1855	73.0	C/E–c‴	288✳	11.3
G.B. Boni	1619	1930	76.0	C/E–c‴	262	10.3
Anonymous	early 17th c.	1916	75.4	FF(?)–c‴	275	10.8

[a] Sounding length of c″.
[b] Sounding length of the longer c″ string in the present C/E–d‴ compass.

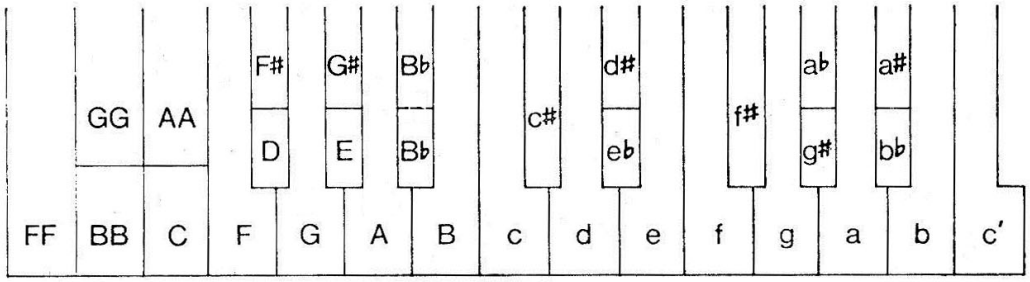
accord with this view. There is even evidence for the assertion that single-strung instruments were made as late as *c.* 1700, since four such harpsichords made by Cristofori are listed in an inventory of 1713, prepared when he took charge of the instruments of Cosimo III, Grand Duke of Tuscany.[12] In view of the fact that such harpsichords appear to have been built throughout the better part of two centuries, an evolutionary explanation of the single-strung instrument in terms of its representing the earliest form of Italian harpsichord seems unjustified. It is not proper to consider such instruments as spinets (as Hirt[13] claims, on the ground that both are single-strung—as indeed they are), nor is there any sound evidence that in harpsichord-making single stringing preceded double stringing, since double stringing is mentioned by Arnault of Zwolle in the mid-1400s.

All but one of the instruments listed above are of true inner-outer construction, although only a few preserve their original outer cases. Of these, the Hieronymus Bononiensis and the Nürnberg Collection's anonymous instrument call for special attention because their cases are covered with leather tooled and gilt with ornamental designs. The case of the anonymous instrument (plate 35) seems to be the older of the two, since it dates from the sixteenth century. Its sides are covered with architectural ornaments showing arcades with lions carrying alternately lilies and roses (plate 36). This use of the lion with a lily points to the instrument's

having been built in Florence, a suggestion that is supported by the discovery of a Florentine coin under the leather covering during the restoration. The instrument rests on an original gilt stand.

Four of the eight instruments listed are made of cypress, the exceptions being the Dominicus Pisaurensis (plates 37 and 38), which is made of cedar, the Bertarinus (plates 39 and 40) and the Nürnberg anonymous, the sides of which are maple, and the Bristol anonymous, which is of false inner-outer construction but has a cypress-lined case. (The use of maple seems to be an early feature, dating from a period during which Italian harpsichord-making was not yet as standardized as in the following centuries.) In size, all the instruments belong to the smaller type, their lengths ranging from 1790 mm (70.5) to 1920 mm (75.4). However, two of the instruments (the Hieronymus Bononiensis and the Dominicus Pisaurensis) do not have the long slanting tail that is generally considered to be characteristic of all early Italian harpsichords.

The compass of all but four of the instruments is C/E–c‴. (The Hieronymus Bononiensis now has a C/E–d‴ keyboard and may originally have had a range of F–f‴, lacking the low F♯ and G♯;[14] the Dominicus Pisaurensis has a C/E–f‴ compass.) The lowest two chromatic keys of the Fenton House anonymous instrument are split, to provide the low F♯ and G♯; a unique feature of this keyboard is that the D and E keys (that is, the front portions of the F♯ and G♯ keys) cross over their neighbours, to the left, so that the D key raises the second jack and the E key, the third. (The front portion of the F♯ key crosses the F key, and the front portion of the G♯ key crosses the G key, the back portion of the F♯ key, and the F key.) The same split keys occur in the Boni harpsichord, which in addition has enharmonically divided keys for e♭/d♯, g♯/a♭, e♭′/d♯′, g♯′/a♭′, and e♭″/d♯″. In meantone temperament, this device enables a performer to play in the keys of E major, E minor, E♭ major, C minor, A♭ major, and F minor with the same purity of intonation as in the more usual keys. The Bristol anonymous has a keyboard of unusual interest because of the many divided keys, both accidentals and naturals. The arrangement of the bass notes suggested by Mr John Barnes on the basis of the order of the key levers is as follows:



As indicated by the dashed line, the B♭ key is not actually divided but is merely scored so as to resemble its neighbours; the remaining e♭, g♯, and b♭ keys are, however, divided throughout, except for the highest octave, which has no divided keys.

The soundboards of most of the instruments listed are made of cypress, although that of the Nürnberg anonymous is pine and that of the Dominicus Pisaurensis is cedar, as is the whole of its inner case. This instrument possesses one especially interesting feature, to my knowledge unique in Italian harpsichords : between the bottom of the instrument and the soundboard there is an intermediate resonance board that lies exactly in the middle of the space between the bottom of the instrument and the soundboard; this resonance board is made of pine and appears to be of the same size as the soundboard.[15] Thus, it would seem to be similar to the counter-soundboards found in a few early Flemish and English instruments.[16] Another interesting feature of the Pisaurensis harpsichord is the very narrow wrestplank for the tuning pins, the nut being placed on a section of free soundboard between the wrestplank and the box slide. This construction also occurs in two non-Italian harpsichords of northern provenance, the claviorgan by the Fleming Lodewijk Theeuwes, made in London in 1579,[17] and a harpsichord by John Haward, in London in 1622.[18] One might be inclined to interpret the use of free soundboards in front of the jacks as an Italian feature, which was later introduced into Flanders and then into England. In any case, the dates of 1533 for the Italian instrument, 1579 for the Flemish example executed in England, and 1622 for the English example are suggestive. The wrestplanks of the Bertarinus and the Boni are massive blocks, while that of the Nürnberg anonymous was missing when, in 1962, the instrument became the property of the Museum. (It has been replaced in the style of that in the Dominicus Pisaurensis.)

The restoration of the Bertarinus harpsichord,[19] in the course of which a non-original second unison register was removed, thereby returning the instrument to its original single-strung disposition, presented an intriguing problem for which no solution was found until after the restoration was completed. Both of the jack slides had a disproportionately large distance between the two lowest slots (see figure 1). Furthermore, there was an extra hole in the front row of tuning-pin holes in the wrestplank. This front row must have been the original one, since scars left by an earlier nut partly overlap the second row of holes. (This original nut had been replaced by a new one when the second register was added.) There were considerable differences between the two jack slides, although both had the large distance between the two lowest slots. The narrower front slide with rather small slots was made of a

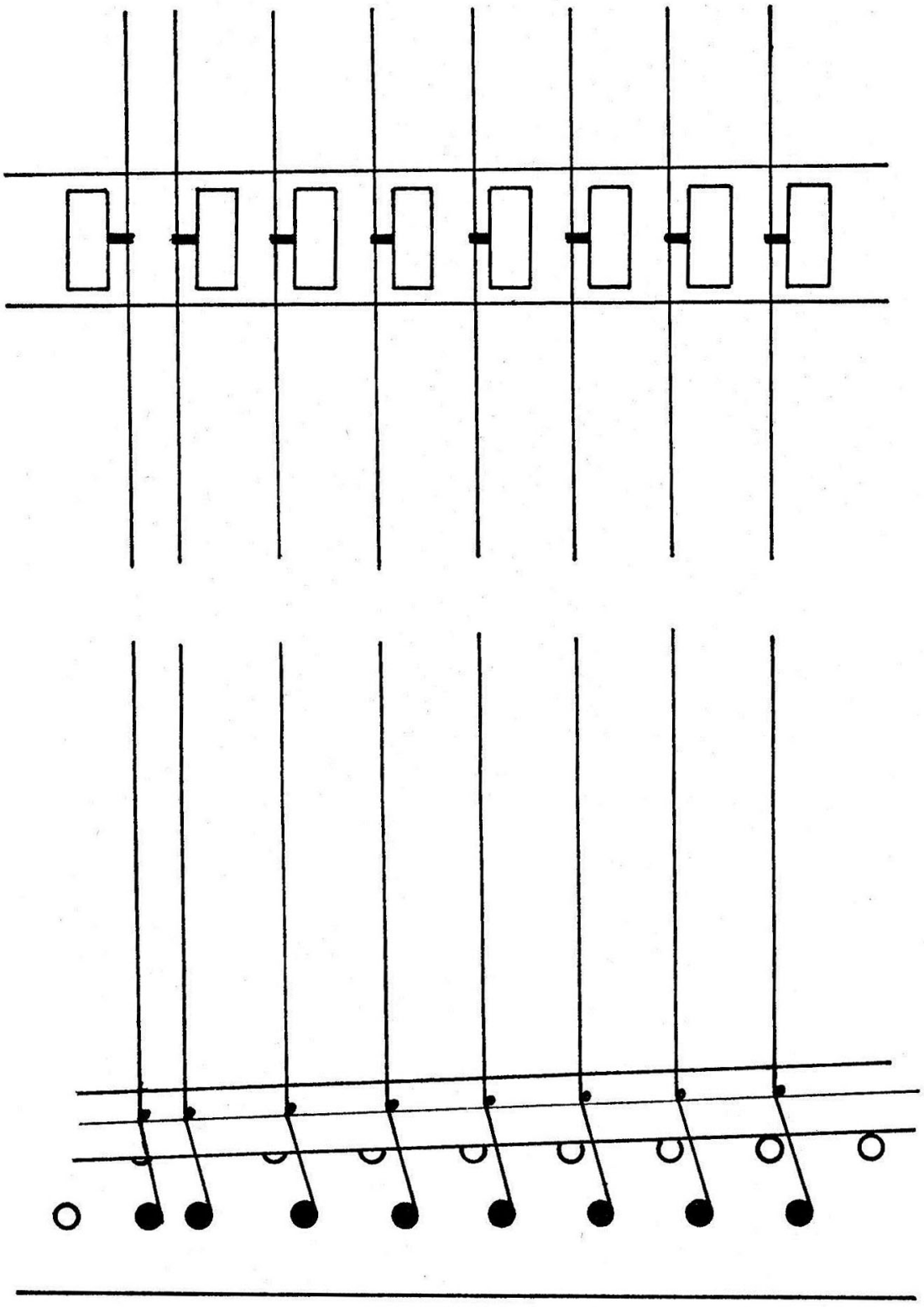


Figure 1

species of pine (*picea excelsa*) which, in Italy, grows only in the Alps. Therefore, it appeared doubtful that this slide originally formed part of an instrument that was most probably made in Rome. The material of the rear slide, which had larger slots and was of a much more substantial construction, was apple-wood which can be found throughout the Italian peninsula. The sides of this slide and the rear edge of the wrestplank had been planed down, obviously in order to allow the adding of the slide for the second register. Marks on the sides of the instrument clearly showed the original width of the wrestplank, which permitted determination of the original width of the rear slide. For the problem of the wide spacing between the two lowest slots, only the following solution presents itself: if the lowest jack had originally been turned round—that is, had plucked to the right while all the other jacks plucked to the left—the distance between the two lowest strings would have been smaller than that between any of the others, thus explaining the extra tuning-pin hole (see figure 2). In order not to bring the two lowest holes too close to each other, however, the distance between the two lowest jacks would have had to have been increased, thus explaining the wide spacing between the lowest two slots in the jack slides. Of course, when the second register was added, such a system involving two different directions of plucking in a single row of jacks had to be abandoned, and the spacing of the lowest tuning-pin holes found before the restoration became necessary. (The present writer is fully aware of the hypothetical character of this solution, since no such arrangement of the jacks has previously been observed in harpsichords, although it is found in virginals and spinets.)

The question of scaling is not difficult in the instruments mentioned here. The lengths of c'' fall between 262 mm (10.3) and 295 mm (11.6), clearly establishing that short-scaled Italian instruments, including examples with a C/E–f''' range (the Dominicus Pisaurensis), existed in the sixteenth century. Hubbard[20] tends to assume stringing with gut rather than wire on single-strung harpsichords. The present writer is not inclined to concur in this view because of lack of convincing evidence and because of the beautiful tonal results of wire stringing on three of the instruments examined above. (In this connection, it should be noted that even Hubbard finds that the sound of an Italian harpsichord strung in gut is very poor.)[21]

The conclusions to be drawn from this group of instruments can be summarized as follows: Italian harpsichord-makers developed a comparatively standardized type no earlier than the seventeenth century. Before 1600, Italian makers produced several types that survived to a limited extent after 1600. Among these, one of the

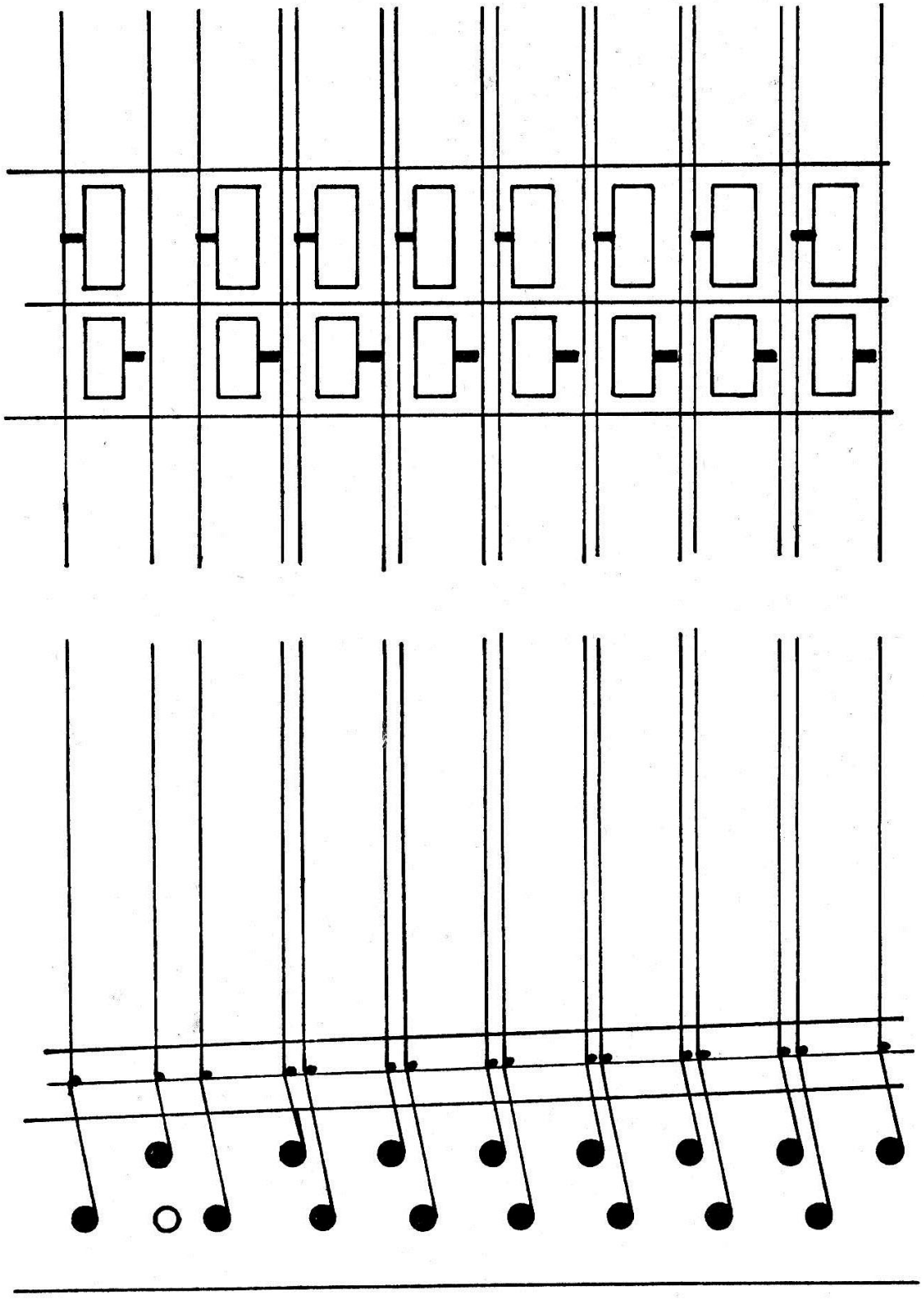


Figure 2

most interesting categories was the single-strung harpsichord, which was fairly common in the sixteenth century and which, even as late as Cristofori's time, had not become completely extinct. In addition, before the early seventeenth century, considerable variation of certain features in harpsichords can be found in Italian instruments. Cypress was not universally used as a material for the case; resonating surfaces were occasionally increased by a resonance board underneath the soundboard and by a small section of free soundboard under the nut; jacks with reversed plucking directions in the same register were occasionally used; and short scaling was used even on instruments with extended keyboard range. It is hoped that these conclusions will help to correct our views on the history of harpsichord-making in Italy, which still show a tendency to generalize from a standard type that developed only at a comparatively late date.

Acknowledgements

I wish to express my thanks to Professor Dr Richard Petzoldt of the Musical Instrument Museum of the Karl-Marx-Universität, Leipzig, for permitting me to examine the instruments by Dominicus Pisaurensis in that museum; to him and to Professor Ugo Procacci, Soprintendente alle Gallerie ed Opera d'arte delle Province di Firenze, Pistoia ed Arezzo, Florence, for their permission to publish photographs of instruments in their care; and, finally, to Dr J. H. van der Meer, Curator of the Musical Instrument Collections of the Germanisches Nationalmuseum, who took a lively interest in the completion of this article.

NOTES AND REFERENCES

1 A ninth example which came to my attention only as this article was going to press is in the Donaldson Collection at the Royal College of Music, London (no. 175). The instrument now has two unison registers and a keyboard range of C–d‴, lacking the low C♯. According to Mr John Barnes of Edinburgh (to whom I am indebted for the information on this instrument), the harpsichord originally had only one register and probably had a C/E–f‴ compass. It appears to have been built about 1580.

A single-strung harpsichord bearing the signature 'Giovanni Andrea Menegoni, 1690', in the Smithsonian Institution, Washington, D.C., is considered to be a nineteenth-century fake and therefore not discussed in this paper. See *A Checklist of Keyboard Instruments at the Smithsonian Institution* (Washington, D.C., 1967) no. 332,174. Also excluded is the *clavemusicum omnitonum*, built by Vitus de Trasuntinis in 1606 and preserved in the Museo Civico, Bologna. Its four octaves (C–c‴) contain 31 keys each, giving a total of 125 keys. This instrument differs from those considered in this article in that the reasons for single stringing seem to have been purely

practical; not only would there hardly be space for another two rows of tuning pins and another set of strings between the necessarily thin and delicate jacks, but also the problems of keeping even a single set of strings in tune must have bordered on the insuperable.

2 N. and F. Gallini *Museo degli strumenti musicali* (Milan 1963) no. 579

3 Museum no. 226–1879. F. Hubbard *Three Centuries of Harpsichord Making* (Cambridge, Mass., 1965) pp. 5, 8, 10, 14, 37; R. Russell *The Harpsichord and Clavichord* (London 1959) pp. 13, 27, 33, 34, plates 5, 6; R. Russell *Victoria and Albert Museum, Catalogue of Musical Instruments* I, *Keyboard Instruments* (London 1968) no. 1.

4 G. Kinsky *Musikhistorisches Museum von Wilhelm Heyer, Katalog*, I (Köln 1910) no. 67.

5 Museum no. 161. A list of the instruments preserved at the Museo Bardini is being prepared by the present writer.

6 Museum no. MIR 1071.

7 R. Russell *Catalogue of the Benton Fletcher Collection of Early Keyboard Instruments* (London 1957) p. 16.

8 R. Bragard and F. J. de Hen *Les Instruments de musique dans l'art et l'histoire* (Rhode-St-Genèse 1967) p. 104; V.-Ch. Mahillon *Catalogue descriptif et analytique du Musée Instrumental du Conservatoire Royal de Musique de Bruxelles* III (Ghent 1900) no. 1603.

9 I am indebted to Mr John Barnes for bringing this instrument to my attention.

10 A number of clavicitheria with only one stop exist most of which are of North European provenance—see T. Norlind *Systematik der Saiteninstrumente* II, *Geschichte des Klaviers* (Stockholm-Hannover 1939) col. 139. It is possible that single-strung harpsichords were also known in France, since Mersenne *Harmonie universelle* (Paris 1636) 'Liure Troisiesme, des Instrumens à Chordes', pp. 106, 110, explicitly speaks of 'double' and 'triple' harpsichords as having two and three sets of strings, respectively. Did he possibly know of a 'single' harpsichord having only one set of strings?

11 Norlind, op. cit., cols. 124, 125; C. Sachs *The History of Musical Instruments* (New York 1940) p. 340.

12 Leto Puliti 'Documenti estratti dall'archivio generale...,' *Atti dell'Accademia del Regio Istituto Musicale di Firenze* (Florence 1874) pp. 192, 196 (translated in part in Russell *The Harpsichord* p. 125). This inventory also lists another single-strung harpsichord without giving the maker's name.

13 F. J. Hirt *Meisterwerke des Klavierbaus* (Olten 1955) p. 134.

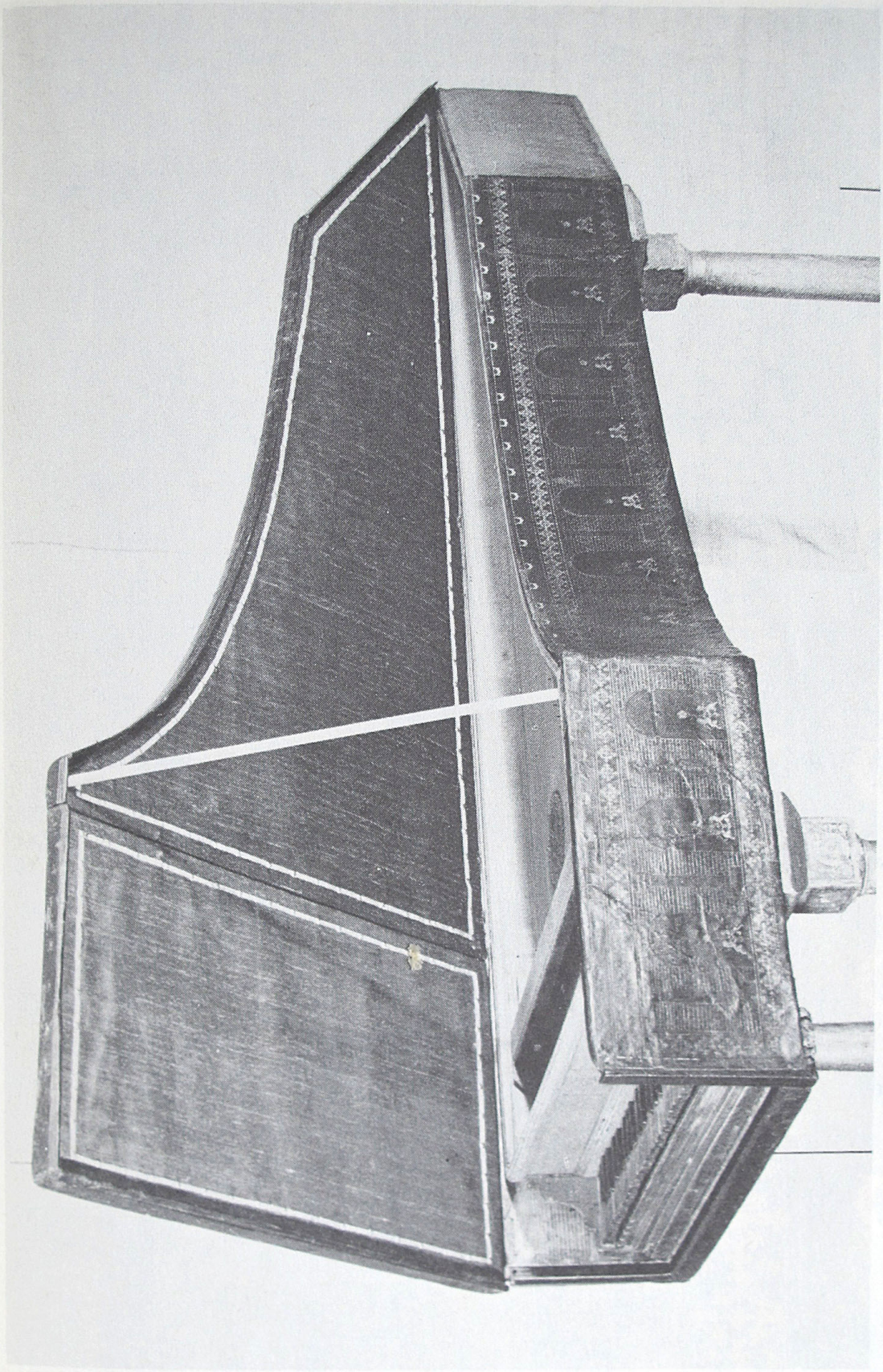
14 See Mr Barnes' article elsewhere in this volume.

15 I am indebted to Mr Jurisch, chief restorer of the Leipzig Museum, for drawing my attention to this matter; unfortunately, a closer examination was not possible, since there was only a small hole in the bottom through which the resonance board could be seen.

16 Hexagonal virginal by Joes Karest, Antwerp, 1548; rectangular virginals by Johannes Grauwels, Antwerp, *c.* 1580, and Adam Leversidge, London, 1666; harpsichords by John Haward, London, 1622, and Thomas Hitchcock, London, *c.* 1700. See Hubbard, op. cit., p. 48.

17 London, Victoria and Albert Museum, no. 125–1890; Russell *Victoria and Albert Museum Catalogue* no. 16.

18 Property of Lord Sackville, Knole Park, Sevenoaks, Kent. Russell *The Harpsichord* p. 66, plate 56.



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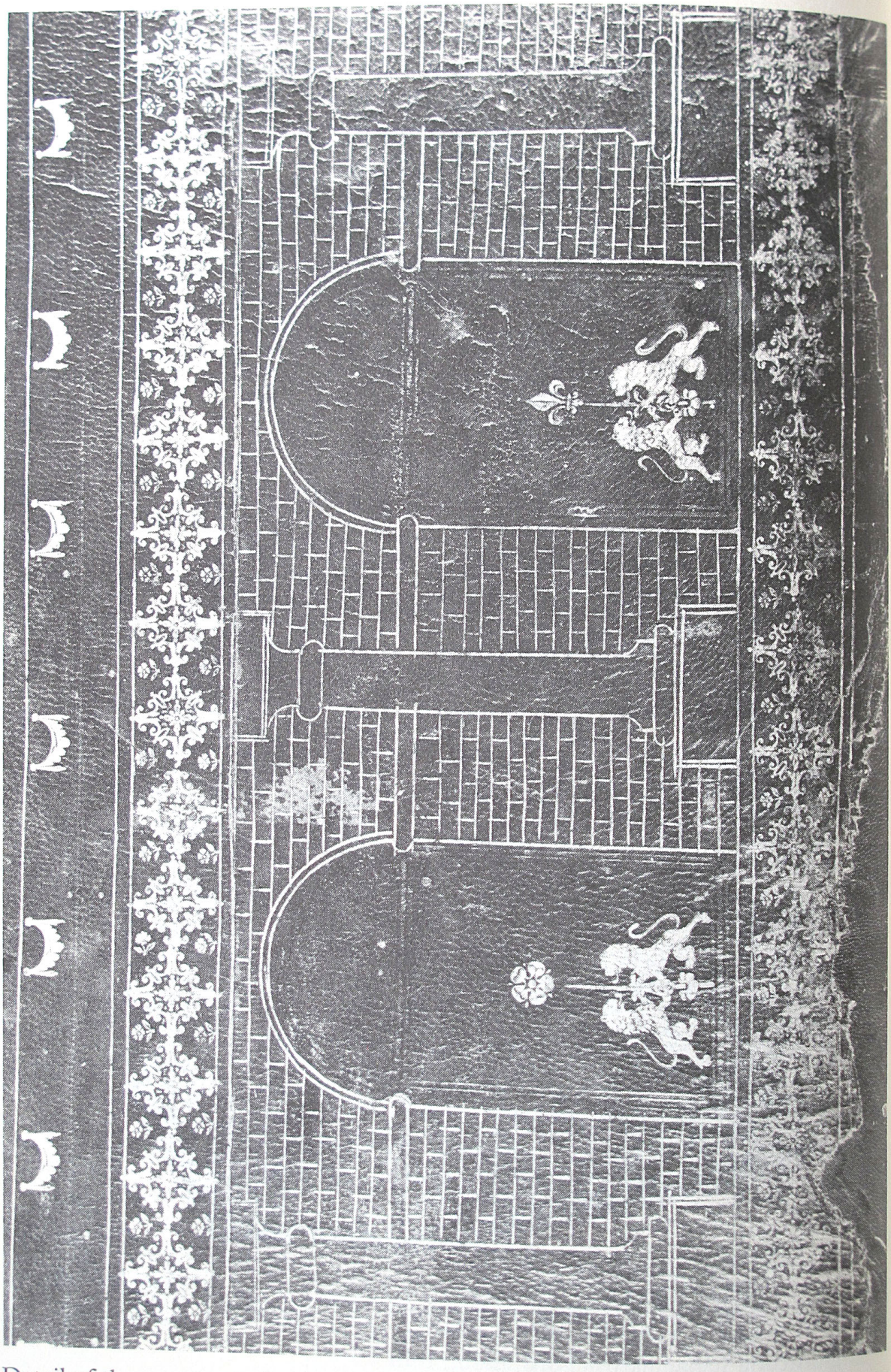
Single-strung Italian harpsichord, anon., 16th century (Rück Collection, Germanisches National-museum, Nürnberg). *Friedemann Hellwig*



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Detail of the ornamentation on the outer case of the harpsichord shown in plate 35. *Friedemann Hellwig*

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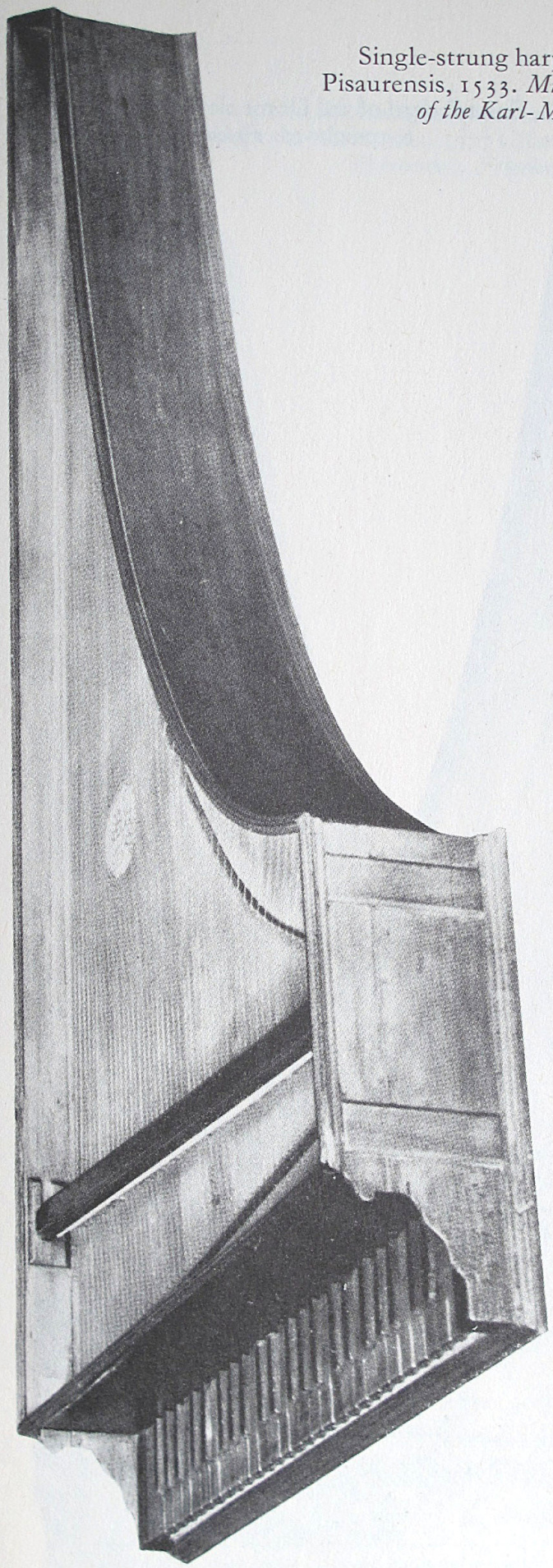

Single-strung harpsichord by Domenicus Pisaurensis, 1533. *Musical Instrument Museum of the Karl-Marx-Universität, Leipzig*

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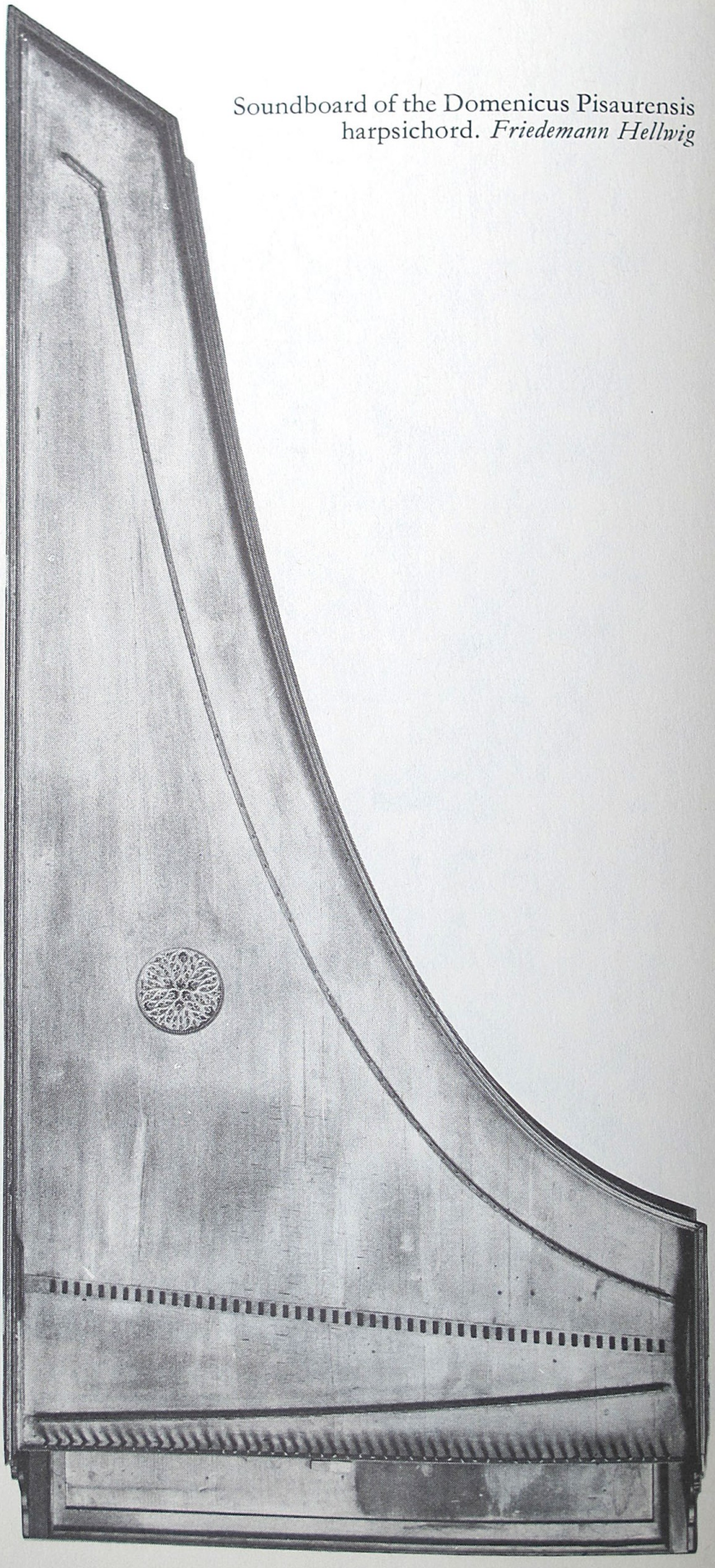

Soundboard of the Domenicus Pisaurensis harpsichord. *Friedemann Hellwig*

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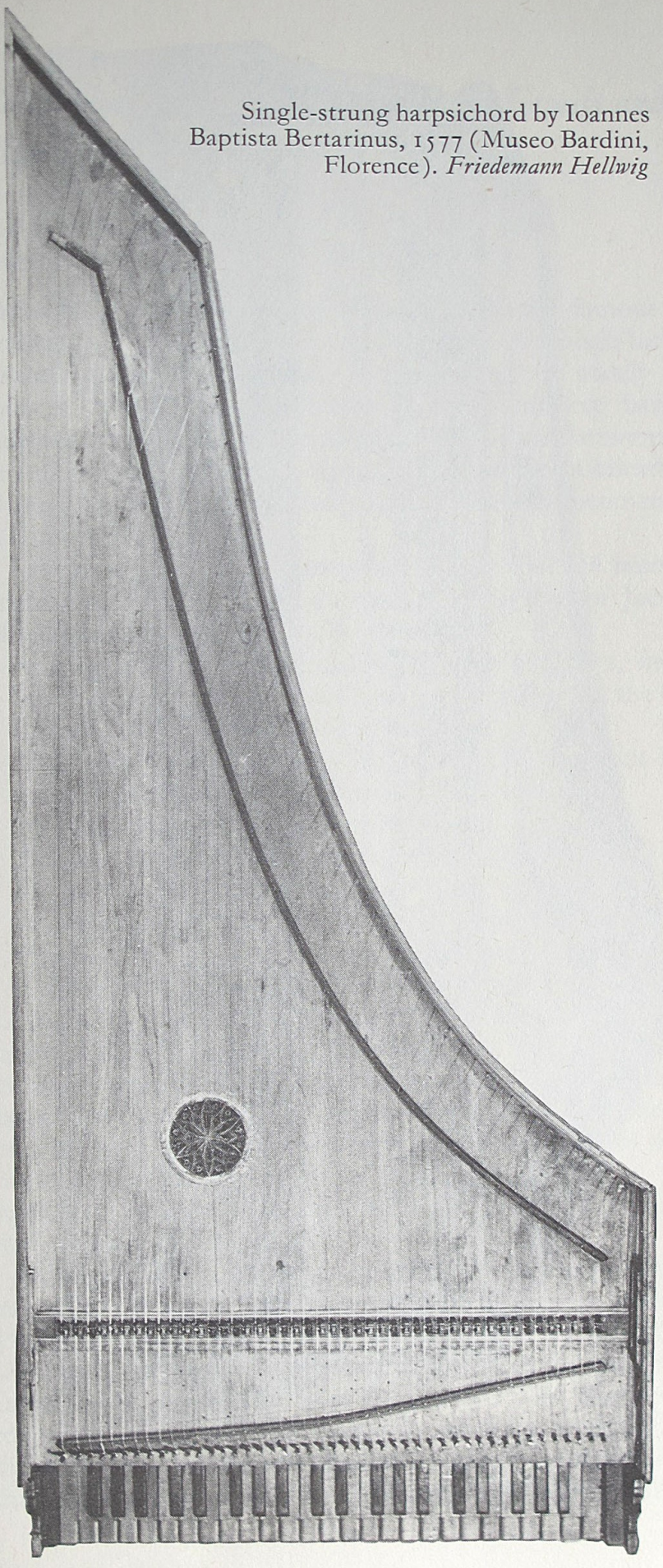
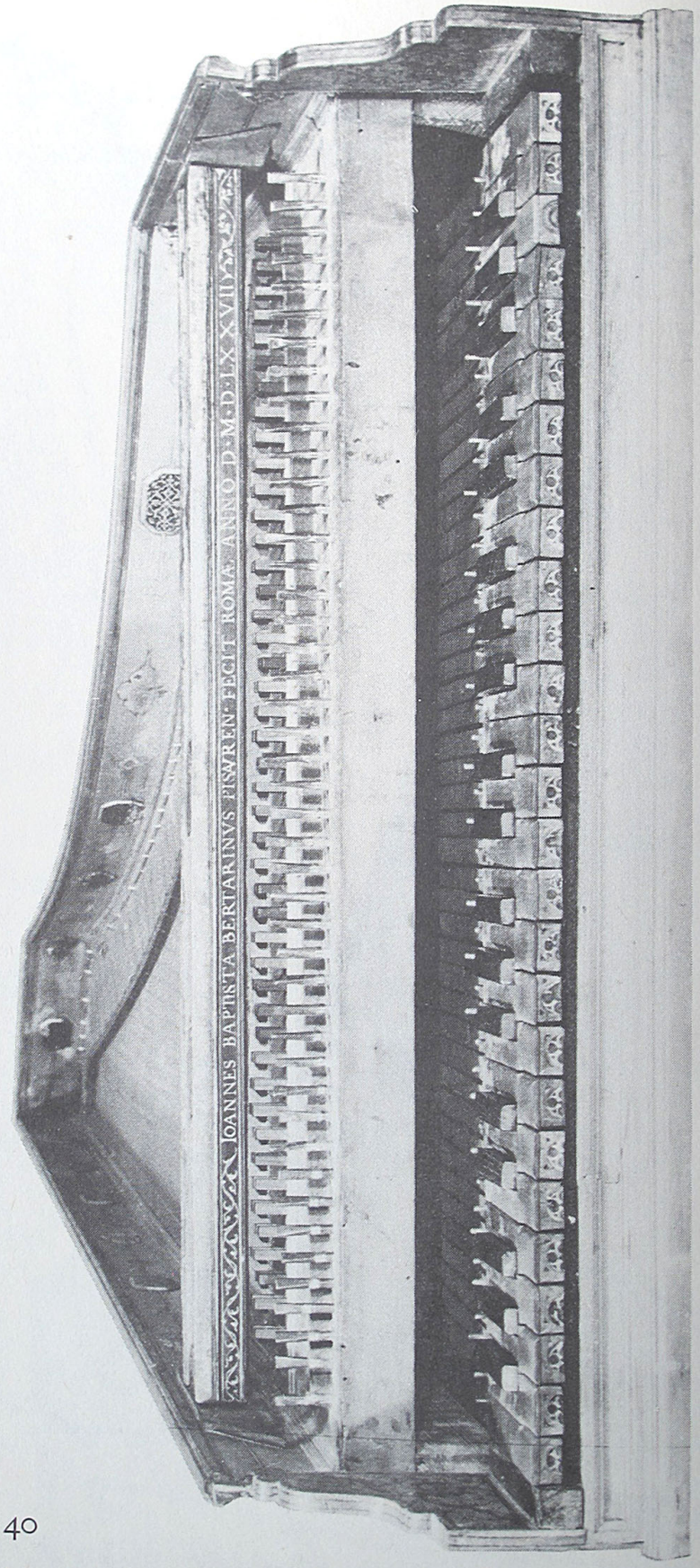


Single-strung harpsichord by Ioannes Baptista Bertarinus, 1577 (Museo Bardini, Florence). *Friedemann Hellwig*



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Inscription on the jackrail of the Bertarinus harpsichord. *Friedemann Hellwig*